

## ABSTRACT OF THE DISCLOSURE

A speech segment to be analyzed is cut out with a window having a length of a plurality of pitch periods for RK model voicing source parameter estimation. GCIs are all estimated for a plurality of voicing source pulses. Based on such estimations, an RK model voicing source waveform is generated, its relationship with the speech segment is analyzed by ARX system identification, and then a glottal transform function is estimated. While this process repeated, when GCIs converge at a predetermined value, the identification is completed. Accordingly, a high quality analysis-synthesis system, which isolates voicing source parameters of speech signals from vocal tract parameters thereof with high accuracy, can be realized.